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PRINCE WILLIAM SOUND SALMON TAGGING RESEARCH, 1981

Ву:

Michael L. McCurdy

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ADF&G TECHNICAL DATA REPORTS

This series of reports is designed to facilitate prompt reporting of data from studies conducted by the Alaska Department of Fish and Game, especially studies which may be of direct and immediate interest to scientists of other agencies.

The primary purpose of these reports is presentation of data. Description of programs and data collection methods is included only to the extent required for interpretation of the data. Analysis is generally limited to that necessary for clarification of data collection methods and interpretation of the basic data. No attempt is made in these reports to present analysis of the data relative to its ultimate or intended use.

Data presented in these reports is intended to be final, however, some revisions may occasionally be necessary. Minor revisions will be made via errata sheets. Major revisions will be made in the form of revised reports.

PRINCE WILLIAM SOUND SALMON TAGGING RESEARCH, 19811

bу

Michael L. McCurdy Research Project Leader

Alaska Department of Fish and Game Division of Commercial Fisheries Cordova, Alaska 99574

1983

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ABSTRACT

In 1981 a tag and tag recovery program was conducted by the Alaska Department of Fish and Game on adult Pacific salmon (Oncorhynchus sp) in Prince William Sound. The program's short term objective was to determine temporal and spatial relationships of wild and hatchery stocks in the general areas of existing hatcheries and temporal and spatial occurrences of wild stock in the general areas of proposed hatchery sites. The long term objective is to provide the Department with a basis for management techniques to prevent either under or overharvesting of either group of fish.

A total of 3,859 salmon was tagged with labeled and sequentially numbered Peterson disc tags. Salmon were captured with a purse seine operated from a chartered fishing vessel. Tag recovery was from the commercial fishery and spawning ground surveys; a total of 703 tags were recovered.

Four hatcheries were involved in this study; twenty tagging sites were used.

KEY WORDS: tag and tag recovery, adult salmon, wild and hatchery stocks, temporal and spatial occurrences, existing and proposed hatcheries.

INTRODUCTION

At present, most wild Pacific salmon (Oncorhynchus Sp) stocks in Prince William Sound (Figure 1) are in a state of high productivity; stocks that suffered the depletive effects of the 1964 earthquake are increasing through protective management practices and favorable environmental factors. junction with this upward trend in wild stock production, there is also a new and productive salmon hatchery program in Prince William Sound. The advent of this hatchery program presents a complex problem to the area fishery manager. It is very difficult to successfully manage for both wild and hatchery returns that will have similar timing and migration routes, but yet require different exploitation rates. At present, Alaska Department of Fish and Game (ADF&G) policy dictates that "if complexities arise in managing mixed stocks, including both hatchery and wild fish, it will be State policy to manage the collective resources in a manner that favors protection of the wild stocks." (ADF&G 1978). However, in reality, the resource manager must allow the private nonprofit hatchery owners and the common property fishery participants to harvest the hatchery returns in a timely manner to: (1) ensure a quality catch, and (2) allow a sufficient and timely escapement to the hatchery for its financial and brood stock requirements.

In order to provide a data base to solve this problem, it was considered necessary to conduct a tag and tag recovery program in the general areas of existing and proposed hatchery sites. The 1981 program involved four different hatcheries, which consisted of one public and three private nonprofit sites. The public site is Cannery Creek, now operational; this site is operated by the ADF&G, Fisheries Rehabilitation, Enhancement, and Development Division (F.R.E.D.). The private nonprofit sites are operated or proposed by the following corporations: (1) Solomon Gulch as proposed by the Valdez Fisheries Development Association (V.F.D.A.), (2) Esther Island facility as proposed by the Prince William Sound Aquaculture Corporation (P.W.S.A.C.), and (3) Port San Juan, Evans Island site, as operated by P.W.S.A.C.

MATERIALS AND METHODS

Salmon for tagging were captured using a purse seine operated from a chartered purse seine vessel. Each fish was tagged with a sequentially numbered 19 mm (3/4 in) diameter Peterson disc tag. Only species was recorded along with tagging site and date, i.e. no data were taken regarding age, weight, length, or sex. Fish for tagging were captured at established commercial fishery sites only. Tagging was conducted 5 days per week on a Wednesday through Sunday basis. With the exception of special openings or closures, the Prince William Sound fishery is conducted Monday through Friday. Tagging on weekends was conducted to attain a lead of at least 24 hours on migration routes before any possible fishery interceptions could occur.

Tag recoveries were accomplished via the commercial fishery and spawning ground escapement surveys. Fishermen were provided with data recording forms and were alerted to the program through P.W.S.A.C.'s Newsletter and news releases through

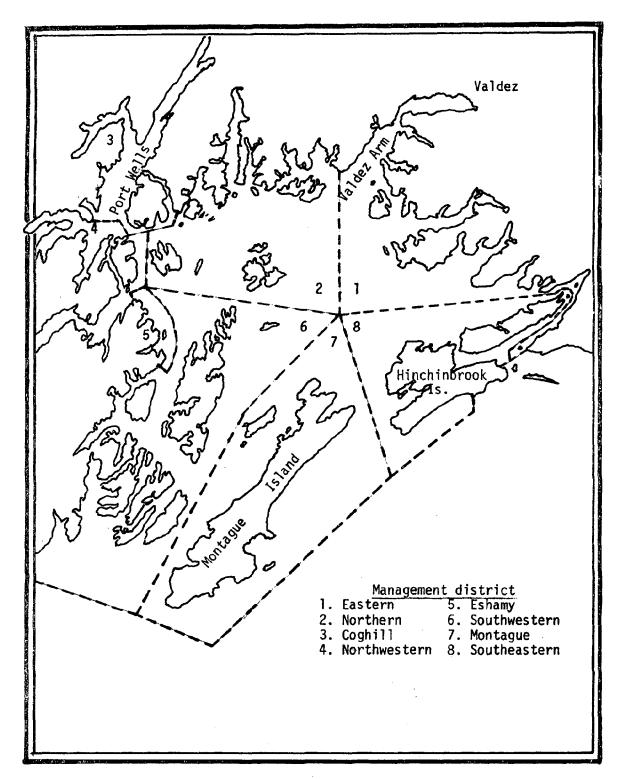


Figure 1. Prince William Sound management area.

the local newspaper and radio station. They were requested to return their recovery data at their earliest convenience. The stream tag recovery segment was conducted by two, two-man Commercial Fisheries Division crews who used the State vessel MONTAGUE as a base of operations. In addition, F.R.E.D. Division, P.W.S.A.C., V.F.D.A., Nerka, Inc., U.S. Forest Service, and Commercial Fisheries Division weir personnel also conducted ground stream surveys. This effort resulted in somewhat over 200 streams being surveyed at least two to three times for the presence of tagged salmon. A listing of the Prince William Sound salmon streams by district and statistical area is given in Appendix A.

All data resulting from this program were entered into the Prince William Sound salmon computer file for future use regarding fishery management and modeling.

RESULTS

Over the duration of the program a total of 20 different sites for all of the hatchery sites involved was used to evaluate presence of wild and hatchery stocks. A total of 3,448 pink salmon (0. gorbuscha), 363 chum salmon (0. keta), 18 sockeye salmon (0. nerka), and 30 coho salmon (0. kisutch) was tagged during the program. No chinook salmon (0. tshawytscha) were tagged. Tables 1 through 4 show tagging summaries, by species, tagging site, and date for each of the hatchery sites.

Tag recovery results for each site and species are presented for each tagging experiment. These results are expressed as percentage of return by district. The percentages are further broken down into catch and individual stream recoveries which represent their respective portions of the total number of recoveries from the experiment involved. The total district figures represent 100% of the recoveries; individual catch and/or stream recoveries do not always add to 100% as a result of rounding.

DISCUSSION

As mentioned above, no extensive post-1964 earthquake odd-year tagging programs have been conducted in Prince William Sound. This is a major factor for data comparison for Prince William Sound pink and chum salmon stocks because of the following reasons:

- 1) The 1964 Alaska earthquake greatly altered the Sound's topography through severe tectonic disturbances, which resulted in land mass vertical movements ranging from +32 feet to -6 feet (Figure 2).
- 2) Results of tectonic movements ranged from the complete removal of established intertidal spawning grounds from tidal influences through land uplift to the complete loss of established intertidal and freshwater spawning grounds through the continuous inundation of saltwater as effected by land subsidence.

Table 1. Tagging summary for the proposed Valdez Fisheries Development Association's Solomon Gulch hatchery, Port Valdez, Prince William Sound, 1981.

	Species							
Date(s)	Chinook	Sockeye	Coho	Pink	Chum	Total		
8/05 8/06	0 0	0	3 18	49 147	21 98	73 263		
Total	ŏ	ŏ	21	196	119	336		
8/06	0	0	1	4	0	5		
	0	0	22	200	119	341		
	8/05 8/06 Total	8/05 0 8/06 0 Total 0	Date(s) Chinook Sockeye 8/05 0 0 8/06 0 0 Total 0 0 8/06 0 0	Date(s) Chinook Sockeye Coho 8/05 0 0 3 8/06 0 0 18 Total 0 0 21 8/06 0 0 1	Date(s) Chinook Sockeye Coho Pink 8/05 0 0 3 49 8/06 0 0 18 147 Total 0 0 21 196 8/06 0 0 1 4	Date(s) Chinook Sockeye Coho Pink Chum 8/05 0 0 3 49 21 8/06 0 0 18 147 98 Total 0 0 21 196 119 8/06 0 0 1 4 0		

Table 2. Tagging summary for the Alaska Department of Fish and Game's F.R.E.D. Division Cannery Creek hatchery, Unakwik Inlet, Prince William Sound, 1981.

			S	pecies			· · · · · · · · · · · · · · · · · · ·
Tag site	Date(s)	Chinook	Sockeye	Coho	Pink	Chum	<u>Total</u>
Irish Cove, Glacier Island	7/20		0	0	92	0	92
Granite Point	7/20	0	2	0	85	3	90
Unakwik Point	7/20 7/21 Total	0 0 0	0 0	0 0 0	7 17 24	27 13 40	34 30 64
Kiniklik	7/22	0	0	0	73	6	79
Point Pellew	7/21	0	1	0	11	. 0	12
Mueller Coye	7/20	0	1	0	111	9	121
Siwash Bay Entrance	8/08	o	0	0	15	ז	16
Eastside Unakwik Inl et	7/21	0	0	0	57	48	105
Total		0	4	0	468	107	579

Table 3. Tagging summary for the proposed Prince William Sound Aquaculture Corporation's Esther Island hatchery, Prince William Sound, 1981.

				Specie			
Tag site	Date(s)	Chinook	Sockeye	Coho	Pink	Chum	Total
Hodgkins Point	7/25 7/26 Total	0 0 0	1 0 1	0 1 1	35 107 142	4 9 13	40 11 <i>7</i> 157
Culross Island	7/22 7/23 7/25 7/26 Total	0 0 0 0	2 3 0 0 5	0 2 0 0 2	188 422 139 64 813	16 48 14 12 90	206 475 153 76 910
Tota1		0	6	3	955	103	1,067

Table 4. Tagging summary for the Prince William Sound Aquaculture Association's San Juan hatchery, Prince William Sound, 1981.

				pecies		/	· .
Tag site	Date(s)	Chinook	Sockeye	Coho	Pink	Chum	Total
Chenega Island	7/29	0	1	0	176	7	184
South Knight Island Passage	7/30	0	0	0	27	0	27
Fox Farm	7/31	0	1	1	328	5	335
	8/16 Total	0	0.	0	251 579	5 10	256 591
Middle Cape	8/01	0	0	4	313	3	320
Squirrel Bay	7/31 8/01 Total	0 0 0	0 0 0	0	65 164 229	0	65 164 229
Bishop Rock	7/30 8/14 Total	0 0	1 5 6	0	4 284 288	0 12 12	5 301 306
Sawmill Bay	8/15	0	0	0	201	2	203
Shelter Bay	7/30	0	0	0	12	0	12
Total		0	8	5	1,825	34	1,872

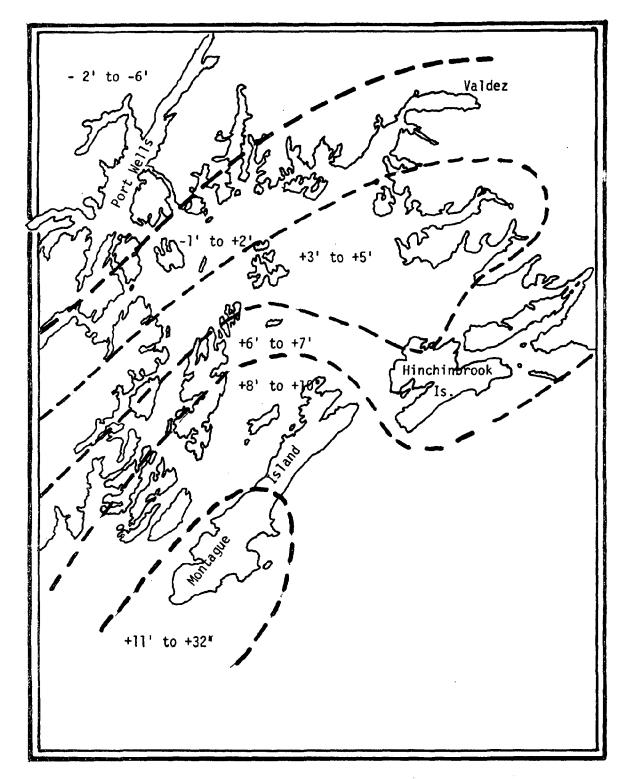


Figure 2. Approximate tectonic effects of the 1964 Alaska earthquake, expressed in feet of uplift or subsidence, on Prince William Sound.

- 3) The loss of established intertidal spawning grounds greatly affected the Sound's even- and odd-year pink salmon stocks in that prior to the earthquake even-year pink salmon stocks experienced greater productivity than odd-year stocks as a result of different spawner distribution, i.e., an average of 75% of even-year pink salmon spawners utilized intertidal spawning grounds while odd-year spawners only averaged 50%, the consequence of this was a greater loss of established spawning grounds to even-year pink salmon.
 - 4) The altered intertidal area resulted in reversed productivity rates to the favor of odd-year stocks which utilize to a greater extent upstream or freshwater spawning grounds, that experienced far less disturbances as a result of the earthquake.
 - 5) The earthquake also affected return timing of both stocks of fish. Consequently, as a result of the above factors, comparisons between pre- and post-earthquake pink stocks are difficult. The chum salmon stocks were also affected by the earthquake; the results of which were lowered productivity rates overall. Some of these effects have been subtle and slow in coming and are not understood at this time. The Sound's major sockeye salmon stocks seem to be the least affected of the three species as many of these stocks spawn in lakeshore springs.

Figures 3 through 6 show the hatchery sites, proposed and existing, and their associated tagging sites. Tables 5 through 8 show the results of each of the tagging experiments, by hatchery site, dates, species, and type and location of tag recovery.

As the reader studies the data regarding pink salmon, it will soon become apparent that not only will the area management staff have to manage a particular hatchery for its stocks and wild stocks occurring in the area in question, but will also have to keep in mind that other hatchery stocks are occurring in that particular area at the same time. To what degree this phenomenon occurs in the future and what management problems may arise with pink salmon or other hatchery raised species remains to be seen as the various hatcheries come into full production.

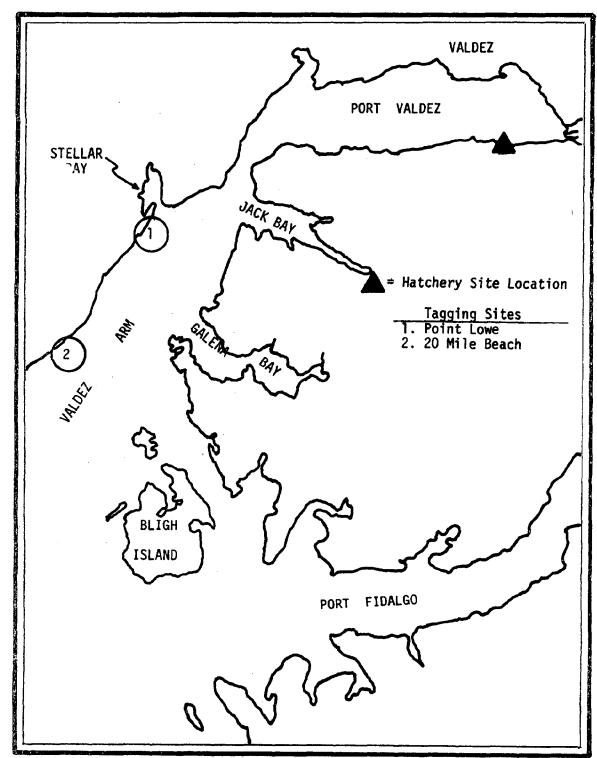


Figure 3. Location of Valdez Fisheries Development Association's Solomon Gulch hatchery and associated tagging sites, Prince William Sound, 1981.

Table 5. Results of tagging experiments, in percentage of returns, by species, tagging sites and dates, for the Valdez Fisheries Development Association's Solomon Gulch hatchery, Prince William Sound, 1981.

				Pink Sa	ılmon	
		Tagging	Catch		Escapemer	
Tag sites		Dates	Area	6/ /6	Stream	%
Point Lowe No. tagged No. recovered % recovered	50 11 22.0	8/05				
District Eastern Northern No. tagged No. recovered % recovered	90.0% 9.1% 147 15 10.2	8/06	Johnson Cove Galena Bay Sawmill/S.Valdez	18.2 18.2 9.1	Donaldson Cr. Levshakoff Cr. Stellar Creek Wells River	9.1 27.3 9.1 9.1
<u>District</u> Eastern	100.0%		Johnson Cove Galena Bay Sawmill/S.Valdez	20.0 6.7 33.3	Duck River Stellar Creek	6.7 33.3
No. tagged No. recovered % recovered	4 1 25.0	8/06				
District Eastern	100.0%				Stellar Creek	100.0
				Chum Sa	llmon	
Tag sites		Tagging Dates	<u>Catch</u> Area	%	<u>Escapemen</u> Stream	<u>t</u> %
Point Lowe No. tagged No. recovered % recovered	20 1 5.0	8/05				
<u>District</u> Eastern	100.0%		Sawmill/S.Valdez	100.0		
			-Continued-	·		

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Table 5. Results of tagging experiments, in percentage of returns, by species, tagging sites and dates, for the Valdez Fisheries Development Association's Solomon Gulch hatchery, Prince William Sound, 1981 (continued).

					Chum S	<u>almon</u>	
		Tagging		Catch		Escapemen	t
Tag sites		Dates	Area		%	Stream	%
Point Lowe (Cont No. tagged No. recovered % recovered	inued) 98 8 8.2	8/06					-
<u>District</u> <u>Eastern</u>	87.5%					Sunny River Crooked Creek	12.5 75.0
Northern	12.5%					Siwash Creek	12.5
					Coho S	Salmon	
		Tagging	_	Catch		Escapemen	t
Tag sites		Dates	Area		%	Stream	%
Point Lowe No. tagged No. recovered % recovered	3 0 0.0	8/05					
No. tagged No. recovered	18 1	8/06					
% recovered	5.6						
% recovered <u>District</u> Eastern	100.0%		Port \	Va Idez	100.0		

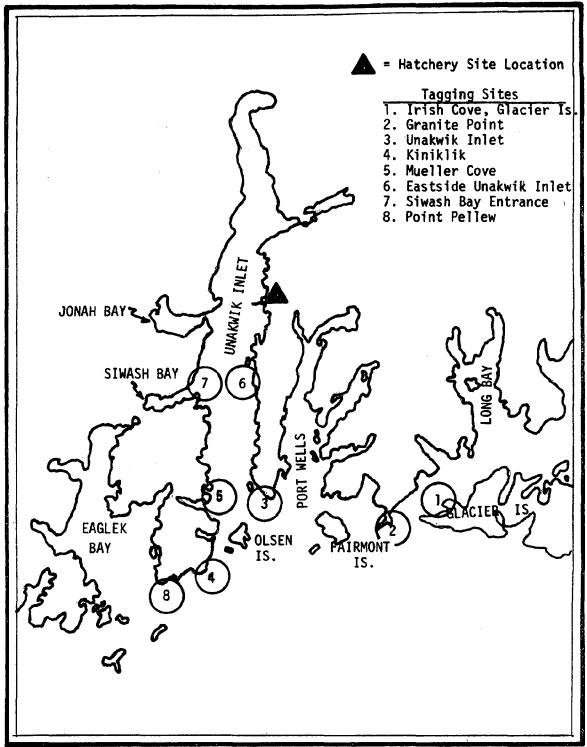


Figure 4. Location of Alaska Department of Fish and Game's F.R.E.D.
Division Cannery Creek hatchery and associated tagging sites,
Prince William Sound, 1981.

Table 6. Results of tagging experiments, in percentage of returns, by species, tagging sites and dates, conducted for the Alaska Department of Fish and Game's F. R. E. D. Division Cannery Creek hatchery, Prince William Sound, 1981.

			<u>Pink Salmon</u>					
		Tagging	Catch		Escapemer	ıt		
Tag sites		Dates	Area	%	Stream	%		
Irish Cove, Glacier Island No. tagged No. recovered % recovered	92 4 4.3	7/20	en e					
<u>District</u> Eastern Northern	25.0% 75.0%		Galena Bay Kiniklik	25.0 50.0	Wells River	25.0		
Unakwik Point No. tagged No. recovered % recovered	7 3 42.9	7/20						
<u>District</u> Northern	100.0%	7/21	Kiniklik Mid Unakwik	33.3 33.3	Siwash River	33.3		
No. tagged No. recovered % recovered	17 4 23.5	7/21						
District Northern Coghill	75.0% 25.0%	iloj Loga distr	Unakwik Point Mid Unakwik Esther Island/	25.0 25.0 25.0	Jonah Creek	25.0		
Kiniklik No. tagged No. recovered	73 ¹ 15 •	7/22	College Fiord					
% recovered	20.5		Maria M			v. V		
<u>District</u> Northern	86.7%			6.7 26.7 13.3	Wells River Cannery Creek Jonah Creek	6.7 13.3 6.7		
Coghill	13.3%		Mid Unakwik Esther Island/ College Fiord	6.7 13.3	Siwash River	6.7		
		-(Continued-					

Table 6. Results of tagging experiments, in percentage of return, by species, tagging sites and dates, conducted for the Alaska Department of Fish and Game's F.R.E.D. Division Cannery Creek hatchery, Prince William Sound, 1981 (continued).

				Pink Sa	1 mon	
		Tagging	Catch	%	Escapemen Stream	<u>t</u> %
Tag sites		Dates	Area	%	Juream	- /0
Point Pellew No. tagged No. recovered % recovered	11 4 36.4	7/21				
District Northern	75.0%		Unakwik Point Kiniklik	25.0 50.0		
Coghill	25.0%		KIIIIKIIK	50.0	Swanson Creek	25.0
Mueller Cove No. tagged No. recovered % recovered	111 18 16.2	7/20				
<u>District</u> Northern	100.0%		Unakwik Point Kiniklik Mid Unakwik	11.1 38.9 5.6	Backyard Creek Wells River Cannery Creek Unakwik Creek	16.7 11.1 11.1 5.6
Eastside Unakwik No. tagged No. recovered % recovered	Inlet 57 4 7.0	7/21			·	
District Northern Coghill	75.0% 25.0%		Mid Unakwik Esther Island/ College Fiord	25.0 25.0	Jonah Creek	50.0
Granite Point No. tagged No. recovered % recovered	85 10 11.8	7/20				
<u>District</u> Northern	100.0%		Unakwik Point Kiniklik	10.0 50.0	Backyard Creek Wells River Jonah Creek	10.0 20.0 10.0
Siwash Bay Entra No. tagged No. recovered % recovered	nce 15 0 0.0	8/08	-Continued-			

Table 6. Results of tagging experiments, in percentage of return, by species, tagging sites and dates, conducted for the Alaska Department of Fish and Game's F.R.E.D. Division Cannery Creek hatchery, Prince William Sound, 1981 (continued).

				Chum S	almon	
		Tagging	Catch		Escapemer	
Tag sites		Dates	Area	%	Stream	%
Unakwik Point No. tagged No. recovered % recovered	27 5 18.5	7/20				
<u>District</u> Northern	100.0%		Kiniklik Jonah Bay Mid Unakwik	20.0 20.0 40.0	Siwash River	20.0
No. tagged No. recovered % recovered	13 6 46.2	7/21				
District Northern	100.0%		Point Pellew Mid Unakwik	16.7 50.0	Cannery Creek Jonah Creek	16.7 16.7
Kiniklik No. tagged No. recovered % recovered	6 2 33.3	7/22				
<u>District</u> Northern	100.0%		Kiniklik	100.0		
Mueller Cove No. tagged No. recovered % recovered	9 0 0.0	7/20				
Eastside Unakwik No. tagged No. recovered % recovered		7/21				
District Northern	100.0%		Southside Glacier Island Unakwik Point Kiniklik Mid Unakwik	25.0 12.5 12.5 25.0	Jonah Creek Siwash River	12.5 12.5
Granite Point No. tagged No. recovered % recovered	3 0 0.0	7/20	-Continued- -16-			

Table 6. Results of tagging experiments, in percentage of return, by species, tagging sites and dates, conducted for the Alaska Department of Fish and Game's F.R.E.D. Division Cannery Creek hatchery, Prince William Sound, 1981 (continued).

					Chun	Salmon	
		Tagging		Catch		Escape	ment
Tag sites		Dates	Area		%	Stream	%
Siwash Bay Entra No. tagged No. recovered % recovered	nce 1 1 100.0	8/08					
<u>District</u> Northern	100.0%					Unakwik Cre	ek 100.0
		Sockeye Salmon			ye Salmon		
		Tagging		Catch		Escape	ment
Tag sites		Dates	Area		%	Stream	%
Point Pellew No. tagged No. recovered % recovered	1 0 0.0	7/21					
Mueller Cove No. tagged No. recovered % recovered	1 0 0.0	7/20					
Granite Point No. tagged No. recovered % recovered	2 0 0.0	7/20					

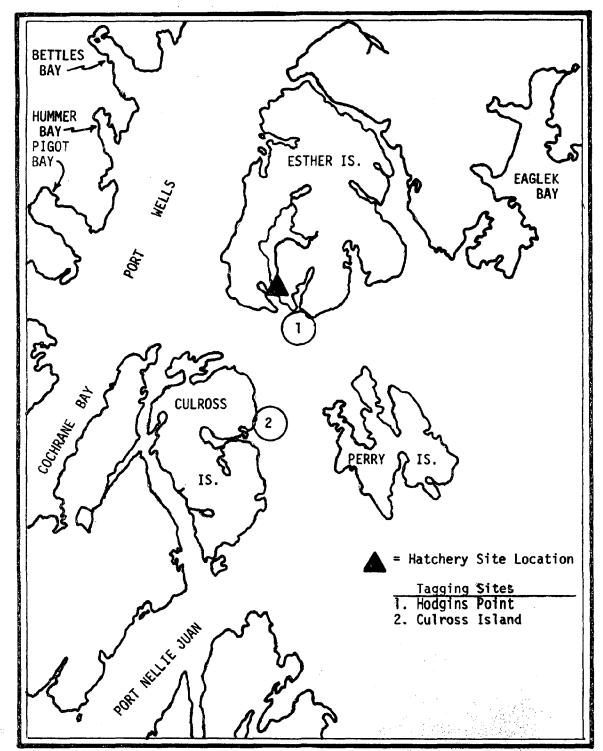


Figure 5. Location of Prince William Sound Aquaculture Corporation's proposed Esther Island hatchery and associated tagging sites, Prince William Sound, 1981.

Table 7. Results of tagging experiments, in percentage of returns, by species, by tagging sites and dates, for Prince William Sound Aquaculture Corporation's Esther Island hatchery, Prince William Sound, 1981.

	"			Pink S	Salmon_	
16 12 17		Tagging	Catch	Escapement		
Tag sites		Dates	Area	%	Stream	%
Hodgkins Point No. tagged No. recovered % recovered	35 4 11.4	7/25				
District Coghill	50.0%		Esther Island/ College Fiord	25.0	Mill Creek	25.0
Northwestern Southeastern	25.0% 25.0%	7/26	Hawkins Island	25.0	Wickett Creek	25.0
No. tagged No. recovered % recovered	107 12 11.2	,, 20				
District Coghill	66.7%		Esther Island/ College Fiord	25.0	Swanson Creek Coghill River	33.3 8.3
Northwestern Southwestern	25.0% 8.3%		Shipyard Eastside Chenega	8.3 8.3	Paulson Creek	16.7
Culross Island No. tagged No. recovered % recovered	188 26 13.8	7/22				
District Northern	11.5%		Kiniklik Point Pellew	3.8 3.8		
Coghill	53.8%		Mid Unakwik Esther Island/ College Fiord	3.8 34.6	Hobo Creek Swanson Creek	3.8 15.4
Northwestern	15.4%		correge riora		Paulson Creek Mink Creek	3.8
Southwestern	19.2%		Eastside Chenega Flemming Island/ Bainbridge/ Point Countess	3.8 3.8	HIIIK GIEEK	11.5
			Shelter Bay Eastshore Knight Island	3.8 7.7		
		-1	Continued-			
			- 19-			

Table 7. Results of tagging experiments, in percentage of returns, by species, by tagging sites and dates, for Prince William Sound Aquaculture Corporation's Esther Island hatchery, Prince William Sound, 1981 (continued).

		Pink Salmon				
	Tagging	Catch		Escapeme		
Tag sites	Dates	Area	%	Stream	%	
Culross Island (Contin						
No. tagged 422 No. recovered 58 % recovered 13.7						
District Eastern 5.2	%	Port Gravina	3.4			
Northern 6.9	%	Boulder Bay Unakwik Point	1.7	Wells River	1.7	
Coghill 60.3	%	Mid Unakwik Esther Island/ College Fiord Westside Port Wells	3.4 20.7 5.2	Hobo Creek Mill Creek Meacham Creel Swanson Creel		
Northwestern 12.1	%			Coghill River Logging Camp Paulson Creel Cochran Creel	Cr.1.7 k 5.2 k 3.4	
Southwestern 13.8	%	Eastside Chenega Flemming Island/ Bainbridge/ Point Countess	3.4 1.7	Mink Creek Larsen Creek	1.7	
		Snug Harbor/Port Helen	1.7			
		Shelter Bay Fox Farm/ Elrington Pass	1.7 1.7			
		Eastshore Knight Island	1.7			
Southeastern 1.7		Anderson Bay/ Double Bay	1.7	÷		
No. tagged 139 No. recovered 18 % recovered 12.9						
District Coghill 61.1	%	Esther Island/ College Fiord	33.3	Meacham Creel Swanson Creel		
Northwestern 22.2	%	Eastside Culross	5.6	Culross Creel McClure Creel	< 11.1	
Eshamy 5.6	%			J.D.Solf Cree		

Table 7. Results of tagging experiments, in percentage of returns, by species, by tagging sites and dates, for Prince William Sound Aquaculture Corporation's Esther Island hatchery, Prince William Sound, 1981 (continued).

				Pink :	Salmon	
•		Tagging	Catch		Escapemen	t
Tag sites		Dates	Area	%	Stream	%
Culross Island (<u>d)</u>				
Southwestern Southeastern	5.6% 5.6%	7/26	Eastside Chenega Port Etches	5.6 5.6		
No. tagged No. recovered % recovered	64 14 21.9	7,20				
District Coghill	92.9%		Esther Island/ College Fiord	42.9	Hobo Creek Swanson Creek	7.1 35. <i>7</i>
Northwestern	7.1%				Coghill River Cove Creek	7.1 7.1
				Chum S	almon_	
		Tagging	Catch		Escapemen	ıt
Tag sites		Dates	Area	%	Stream	%
Hodgkins Point No. tagged No. recovered % recovered	4 0 0.0	7/25	,			
No. tagged No. recovered % recovered	9 2 22.2	7/26				
District Coghill	100.0%		Esther Island/ College Fiord	100.0		
Culross Island No. tagged No. recovered % recovered	16 3 18.8	7/22				
District Coghill	100.0%				Mill Creek Meacham Creek	33.3 33.3
No. tagged No. recovered % recovered	48 10 20.8	7/23 -C	ontinued- -21-		Swanson Creek	33.3

Table 7. Results of tagging experiments, in percentage of returns, by species, by tagging sites and dates, for Prince William Sound Aquaculture Corporation's Esther Island hatchery, Prince William Sound, 1981 (continued).

				Chum Salmon				
		Tagging	Catch		Escapemer			
Tag sites		Dates	Area	%	Stream	%		
Culross Island (Continue	-d)				·		
District Northern Coghill	10.0% 90.0%		Kiniklik Esther Island/ College Fior		Mill Creek Hummer Creek Swanson Creek	20.0 10.0 10.0		
No. tagged No. recovered % recovered	14 1 7.1	7/25						
District Southwestern	100.0%	7/26	Sawmill Bay	100.0				
No. tagged No. recovered % recovered	12 3 25.0	7720						
District Coghill	66.7%				Mill Creek	33.3		
Southwestern	33.3%		Eastside Chene	ga 33.3	Swanson Creek	33.3		
				Sockeye	: Salmon			
•		Tagging	Catch		Escapemen	ıt.		
Tag sites		Dates	Area	%	Stream	%		
Hodgkins Point No. tagged No. recovered % recovered	0.0	7/25						
Culross Island No. tagged No. recovered % recovered	2 0 0.0	7/22						
No. tagged No. recovered % recovered	3 0 0.0	7/23						

Table 7. Results of tagging experiments, in percentage of returns, by species, by tagging sites and dates, for Prince William Sound Aquaculture Corporation's Esther Island hatchery, Prince William Sound, 1981 (continued).

				Coho Salmon					
Tag sites		Tagging Dates	Area	Catch	%	Escape Stream	ement %		
Hodgkins Point No. tagged No. recovered % recovered	1 0 0.0	7/26							
Culross Island No. tagged No. recovered % recovered	2 0 0.0	7/23							

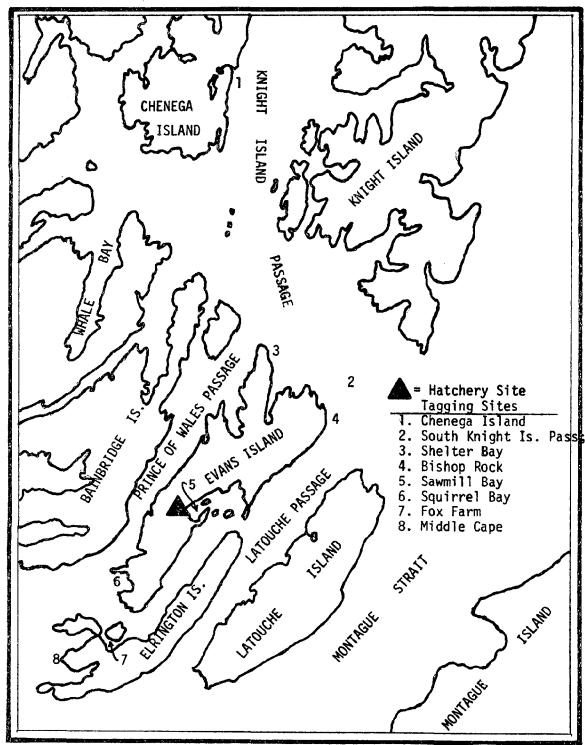


Figure 6. Location of Prince William Sound Aquaculture Corporation's San Juan hatchery, Prince William Sound, 1981.

Table 8. Results of tagging experiments, in percentage of returns, by species, tagging sites and dates, for Prince William Sound Aquaculture Corporation's San Juan hatchery, Prince William Sound, 1981.

			Pink Salmon					
		Tagging	Catch		Escapement			
Tag sites		Dates	Area	%	Stream			
Chenega Island No. tagged No. recovered % recovered	176 32 18.2	7/29						
<u>District</u> Northern Coghill	3.1% 6.3%		Kiniklik	3.1	Harrison Creek 3.1 Hobo Creek 3.1			
Southwestern	84.4%		Eastside Chenega Shelter Bay Eastside Latouch Sawmill Bay Fox Farm/ Elrington Pass	6.3 he 3.1 3.1 3.1	Erb Creek 3.1 Bainbridge Cr. 3.1 Halverson Creek 3.1			
Southeastern	6.3%		Hawkins Island Port Etches	3.1 3.1				
South Knight Island Passage No. tagged No. recovered % recovered	27 7 25.9	7/30						
<u>District</u> Southwestern	100.0%		Eastside Chenega Shelter Bay Sawmill Bay Fox Farm/ Elrington Pass	14.3 42.9 14.3				
Fox Farm No. tagged No. recovered % recovered	328 58 17.7	7/31						
<u>District</u> Eastern	10.3%		Porcupine Point Jack Bay	1.7	Gladhough Cr. 1.7			
Coghill	1.7%		Sawmill/S.Valdez Esther Island/ College Fiord	2 5.2 1.7				
Northwestern	1.7%	_	·Continued-		Culross Creek 1.7			

Table 8. Results of tagging experiments, in percentage of returns, by species, tagging sites and dates, for Prince William Sound Aquaculture Corporation's San Juan hatchery, Prince William Sound, 1981 (continued).

			Pink Salmon				
		Tagging	Catch		Escapemen	t	
Tag sites		Dates	Area	%	Stream	%	
Fox Farm (Continu	ed)						
Southwestern	84.5%		Eastside Chenega Shelter Bay Bishop Rock to Sawmill Bay Fox Farm/ Elrington Pass Sawmill Bay Prince of Wales	8.6 3.4 3.4 5.2 34.5	Bainbridge Cr. Claw Creek Johnson Creek Larsen Creek	1. 1. 22.	
Southeastern	1.7%	8/16	Hawkins Island	1.7			
No. tagged No. recovered % recovered	251 66 26.3			•			
<u>District</u> Southwestern	97.0%		Sawmill Bay	66.7	Pablo Creek Falls Creek	3. 1.	
Montague Southeastern	1.5% 1.5%				Larsen Creek Swamp Creek Cook Creek	25. 1. 1.	
Middle Cape No. tagged No. recovered % recovered	313 55 17.6	8/01					
<u>District</u> Eastern	16.4%		Galena Bay Port Fidalgo Jack Bay	3.6 1.8 1.8	Irish Creek Gregorieff Cr.	3. 1.	
Northern Southwestern	3.6% 72.7%		Sawmill/S.Valdez Kiniklik Eastside Chenega Snug Harbor/ Port Helen Shelter Bay Bishop Rock to Sawmill Bay Middle Cape/ South Twin Bay Sawmill Fox Farm/ Elrington Pass	3.6 1.8 7.3 3.6 7.3 1.8 3.6 20.0 7.3	Cannery Creek Totemoff Creek Johnson Creek Ashton Creek Larsen Creek	1. 1. 1. 16.	

Table 8. Results of tagging experiments, in percentage of returns, by species, tagging sites and dates, for Prince William Sound Aquaculture Corporation's San Juan hatchery, Prince William Sound, 1981 (continued).

			Pink Salmon					
Tag sites		Tagging Dates	<u>Catch</u> Area	%	Escapemen Stream	<u>t</u> %		
Middle Cape (Cont District Montague Southeastern Squirrel Bay	3.6% 3.6%	7/31	North Montague Hawkins	1.8 3.6	Swamp Creek	1.8		
No. tagged No. recovered % recovered	65 14 21.5	7/31						
District Coghill Southwestern	7.1% 92.9%	2./01	Eastside Chenega Middle Cape/ South Twin Bay Sawmill Bay Fox Farm/ Elrington Pass Prince of Wales	7.1 28.6 21.4	Swanson Creek Larsen Creek	7.1 7.1		
No. tagged No. recovered % recovered	164 28 17.1	8/01						
<u>District</u> Eastern Southwestern	3.6% 92.9%		Galena Bay Eastside Chenega Snug Harbor/ Port Helen Shelter Bay Bishop Rock to Sawmill Bay Sawmill Bay Fox Farm/ Elrington Pass	3.6 17.9 3.6 3.6 3.6 46.4 7.1	Pablo Creek Larsen Creek	3.6 7.1		
Southeastern	3.6%		Anderson Bay/ Double Bay	3.6				
Bishop Rock No. tagged No. recovered % recovered	4 1 25.0	7/30						
District Southwestern	100.0%		Bishop Rock to Sawmill Bay	100.0				
		-C	ontinued-					

Table 8. Results of tagging experiments, in percentage of returns, by species, tagging sites and dates, for Prince William Sound Aquaculture Corporation's San Juan hatchery, Prince William Sound, 1981 (continued).

llmon		
Escapement		
am %		
wood Creek 1.4		
an Creek 1.4 oss Creek 1.4 ure Creek 1.4		
en Creek 21.7		
Creek].1 ery Creek].1		
ery Creek 1.1 on Creek 1.1 en Creek 27.4		
Escapement		
ım %		
ny River 100.0		

Table 8. Results of tagging experiments, in percentage of returns, by species, tagging sites and dates, for Prince William Sound Aquaculture Corporation's San Juan hatchery, Prince William Sound, 1981 (continued).

					·		
					Chum S	Salmon	
		Tagging		Catch		Escapeme	ent
Tag sites		Dates	Area	<u> </u>	%	Stream	%
Fox Farm No. tagged No. recovered % recovered	5 0 0.0	7/31					
No. tagged No. recovered % recovered	5 1 20.0	8/16					
District Southwestern	100.0%					Larsen Creek	100.0
Middle Cape No. tagged No. recovered % recovered	3 0 0.0	8/01					
Bishop Rock No. tagged No. recovered % recovered	12 2 16.7	8/14					
<u>District</u> Eastern Southwestern	50.0% 50.0%					Sunny River Larsen Creek	50.0 50.0
No. tagged No. recovered % recovered	2 0 0.0	8/15					
					Sockeye	e Salmon	
		Tagging		Catch		Escapeme	nt
Tag sites		Dates	Area		%	Stream	%
Chenega Island No. tagged No. recovered % recovered	1 0 0.0	7/29					

 $\verb|-Continued-|$

Table 8. Results of tagging experiments, in percentage of returns, by species, tagging sites and dates, for Prince William Sound Aquaculture Corporation's San Juan hatchery, Prince William Sound, 1981 (continued).

					Caalian	. Calman	
	* *				<u> Sockey</u>	e Salmon	
To- oitoo		Tagging	<u> </u>	Catch	 %	Escapem	
Tag sites	*	Dates	Area		%	Stream	%
Fox Farm		7/31					
No. tagged	1	., .,					
No. recovered	0						
% recovered	0.0						
Bishop Rock	•	7/30					
No. tagged	1	•					
No. recovered	0						
% recovered	0.0	0.47.4					
No tagged	_	8/14					
No. tagged No. recovered	5 1						
% recovered	20.0						
District	100 00					F-1 D4	100.0
Eshamy	100.0%					Eshamy River	100.0
					Coho	Salmon	
					00110	Sarmon	
		Tagging		Catch		Escapem	ent
Tag sites		Dates	Area		%	Stream	%
					* · · · · · · · · · · · · · · · · · · ·		
Fox Farm		7/31					
No. tagged	1		,				
No. recovered % recovered	0 0.0						
% recovered	0.0						
Middle Cape		8/01					
No. tagged	4						
No. recovered	0						
% recovered	0.0						

ACKNOWLEDGMENTS

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REFERENCE

Alaska Department of Fish and Game. 1978. Discussion of draft of Policies and Procedures - Private Nonprofit Hatchery Program, Regional Comprehensive Planning. November 8. Policy No. PNP 2.2 Natural Stock Consideration, Page 12.

APPENDIX A

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981.

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Eastern Di	strict		
1	221-10		Hartney Bay, Orca Inlet
2	•	Hartney Creek	Hartney Bay, Orca Inlet
3 4 5 6 7 8 9		Nicolet Creek	Three Mile Bay, Orca Inlet
4		Heney Creek	Three Mile Bay, Orca Inlet
5		Eccles Creek	Whiskey Slough, Orca Inlet
6		Odiak Slough	Orca Inlet
/		Ocean Dock Creek	Orca Inlet
8		Fleming Creek	Orca Inlet
9 10		Crater Lake Creek	NEFCO Cannery, Orca Inlet
11		Little Humpy Creek Humpy Creek	Humpy Cove, Orca Inlet Humpy Cove, Orca Inlet
12		Shepard Creek	Shepard Spit, Orca Inlet
13		Shepara of cek	Nelson Bay, Orca Inlet
14			Nelson Bay, Orca Inlet
15		Nelson Creek	Nelson Bay, Orca Inlet
16		Rude River	Nelson Bay, Orca Inlet
17	221-10	Goat Creek	Nelson Bay, Orca Inlet
18	221-20	Hidden Creek	Hidden Lagoon, Simpson Bay
19		Twin Lakes Creek	Simpson Bay
20		Spring Creek	Simpson Bay
21		Rogue Creek	Simpson Bay
22			Simpson Bay
23 .		Chase River	Simpson Bay
24			Simpson Bay
25 26		Simpson Chook	Simpson Bay
27		Simpson Creek Smith Creek	Simpson Bay Simpson Bay
28		Durkee Creek	Alice Cove
29		burkee oreek	Sheep Bay
30			Sheep Bay
31			Sheep Bay
32			Sheep Bay
33			Sheep Bay
34		_	Sheep Bay
35		Koppen Creek	Sheep Bay
36		Sheep River	Sheep Bay
37		Allen Creek	Sheep Bay
38 20	221 20		Sheep Bay
39	221-20		Sheep Bay

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Eastern Di	strict, continued		
40 41	221-30	Gravina Point Creek Pass Creek	Port Gravina
42 43 44			Port Gravina Port Gravina Port Gravina
45 46 47		Plateau Creek Comfort Creek Native Creek	Port Gravina Comfort Cove, Port Gravina Port Gravina
48 49		Beartrap River Cataract Creek	Beartrap Bay, Port Gravina Beartrap Bay, Port Gravina
50 51 51A		Gravina River Olsen Creek Parshas Creek	Port Gravina Olsen Bay, Port Gravina Parshas Bay, Port Gravina
52 53 54		Control Creek Carlsen Creek	Olsen Bay, Port Gravina Olsen Bay, Port Gravina Port Gravina
55 56 57		St. Matthews Creek	St. Matthews Bay, Port Gravin St. Matthews Bay, Port Gravin St. Matthews Bay, Port Gravin
58 59 60 61 62 63	•		St. Matthews Bay, Port Gravir St. Matthews Bay, Port Gravir St. Matthews Bay, Port Gravir St. Matthews Bay, Port Gravir Humphrey's Hole, Port Gravina Humphrey's Hole, Port Gravina
64 65 66 67	221-30	Coho Creek Knowles Creek	Hell's Hole, Port Gravina Hell's Hole, Port Gravina Hell's Hole, Port Gravina Knowles Head
68	221-40	KIIOWIES CIEEK	Snug Corner Cove, Port Fidalg
69 70 71	221-40		Snug Corner Cove, Port Fidalg Two Moon Bay, Port Fidalgo Two Moon Bay, Port Fidalgo
72 73 74 75		Two Moon Creek Tundra Creek	Two Moon Bay, Port Fidalgo Two Moon Bay, Port Fidalgo Port Fidalgo Port Fidalgo
76 77 78 79		Irish Creek	Irish Cove, Port Fidalgo Port Fidalgo Whalen Bay, Port Fidalgo Whalen Bay, Port Fidalgo
80		Whalen Creek	Whalen Bay, Port Fidalgo
		-Continued-	
		- 35	

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Eastern [District, continued.		
81 82 83 84 85	221-40	Keta Creek	Whalen Bay, Port Fidalgo Port Fidalgo Fidalgo River Delta, Port Fidalgo Fidalgo River Delta, Port Fidalgo Fidalgo River Delta, Port Fidalgo
86 87 88 89 90		Fidalgo River Sunny River Short Creek Fish Creek	Port Fidalgo Sunny Bay, Port Fidalgo Sunny Bay, Port Fidalgo Fish Bay, Port Fidalgo Fish Bay, Port Fidalgo Fish Bay, Port Fidalgo
92 93 94 95 96 97		Shale Creek Kirkwood Creek Rock Creek Cutthroat Creek Banzer Creek	Fish Bay, Port Fidalgo Fish Bay, Port Fidalgo Fish Bay, Port Fidalgo Fish Bay, Port Fidalgo Landlocked Bay, Port Fidalgo Landlocked Bay, Port Fidalgo
98 99 100 101 102	221-40	Rainbow Falls Creek Lagoon Creek Borodkin Creek Tedishoff Creek Tatitlek Creek	Landlocked Bay, Port Fidalgo Landlocked Bay, Port Fidalgo Boulder Bay, Port Fidalgo Boulder Bay, Port Fidalgo Boulder Bay, Port Fidalgo
103 104 105 106 107	221-50 221-50	Brown Creek Boardwalk Creek Bridge Creek Gladhough Creek Black Creek	Tatitlek Narrows Virgin Bay Virgin Bay Virgin Bay Black Point, Valdez Arm
108 109 110 111 112 113	221-40	Bligh Creek Ranch Creek Fox Creek Cloudman Creek Katelnikoff Creek Busby Creek	Bligh Island Cloudman Bay, Bligh Island Cloudman Bay, Bligh Island Cloudman Bay, Bligh Island Tatitlek Narrows, Bligh Island West Bay, Bligh Island
114 115 116 117 118 119	221-50	Turner Creek Millard Creek Duck River Indian Creek Krause Creek Johnson Cove Creek Donaldson Creek	Galena Bay, Valdez Arm Johnson Cove, Valdez Arm Johnson Cove, Valdez Arm

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Eastern Di	strict, continued		
121	221-50	Levshakoff Creek	Jack Bay, Valdez Arm
122			Jack Bay, Valdez Arm
123		Gregorieff Creek	Jack Bay, Valdez Arm
124			Jack Bay, Valdez Arm
125			Jack Bay, Valdez Arm
126			Jack Bay, Valdez Arm
127		Naomoff River	Jack Bay, Valdez Arm
128			Jack Bay, Valdez Arm
129	221-50	Vlasoff Creek	Jack Bay, Valdez Arm
130	221-60	Confusion Creek	Anderson Bay, Port Valdez
131	221-00	Gorge Creek	Port Valdez
132		doi ge creek	Port Valdez
133		Sawmill Creek	Port Valdez
134		Dayville Creek	Port Valdez
135		Allison Creek	Port Valdez
136		Solomon Creek	Port Valdez
137		Lowe River	Port Valdez
138		Dump Creek	Valdez Flats, Port Valdez
139		Dock Creek	Valdez Flats, Port Valdez
140		01d Town Creek	Valdez Flats, Port Valdez
141		Airport Creek	Valdez Flats, Port Valdez
142		Pipe Creek	Valdez Flats, Port Valdez
143		Siwash Creek	Port Valdez
144			Port Valdez
145		Crooked Creek	Port Valdez
146		Seepage Creek	Port Valdez
147		Mineral Creek	Port Valdez
148		•	Mineral Creek Flats, Port Valde:
149		Gold Creek	Port Valdez
150	221-60	Kaydas Creek	Port Valdez
151	221-50	Port Creek	Valdez Narrows, Valdez Arm
152	,	Twin Falls Creek	Sawmill Bay, Valdez Arm
153		Stellar Creek	Sawmill Bay, Valdez Arm
154		Julian Di Can	Sawmill Bay, Valdez Arm
155	221-50		Valdez Arm

-Continued-

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Northern D	istrict		
201	222-10	Emerald Creek	Emerald Cove, Columbia Bay
202			Columbia Bay
203		Lake Creek	Columbia Bay
204			Columbia Bay
205		Columbia Creek	Columbia Glacier
206			Columbia Glacier
207			Granite Cove, Glacier Island Passa
208			Granite Cove, Glacier Island Passa
209		Useless Creek	Useless Cove, Glacier Island Passa
210		Elf Creek	Useless Cove, Glacier Island Passa
211		Middle Creek Inner Creek	Long Bay, Glacier Island Passage
212 213		Bench Mark Creek	Long Bay, Glacier Island Passage
213		Long Creek	Long Bay, Glacier Island Passage Long Bay, Glacier Island Passage
215		Long Creek	Long Bay, Glacier Island Passage
216		Vanishing Creek	Long Bay, Glacier Island Passage
217		Spring Stream	Long Bay, Glacier Island Passage
218		Billy's Creek	Billy's Hole, Glacier Island Passa
219		Gravel Creek	Billy's Hole, Glacier Island Passa
220		Fin Creek	Eickelberg Bay, Glacier Island Pas
221		Eickelberg Creek	Eickelberg Bay, Glacier Island Pas
222		Sere Creek	Eickelberg Bay, Glacier Island Pas
223	222-10		Glacier Island Passage
224	222-20	Backyard Creek	Fairmount Island Passage
225		Fletcher Creek	Fairmount Island Passage
226		White Creek	Granite Bay
227		Granite Creek	Granite Bay
228		Right Creek	Cedar Bay
229		Cedar Creek	Cedar Bay
230			Cedar Bay Lagoon
231		Dalles Const.	Cedar Bay
232		Delta Creek	Wells Bay
233		Surplus Creek	Wells Bay
234 235	,	Wells River	Wells Bay
236			Wells Bay
237			Wells Bay Wells Bay
238		Entrance Creek	Unakwik Inlet
239		LITER WHILE CITECK	Unakwik Inlet
240			Cannery Cove
241	222-20	Cannery Creek	Unakwik Inlet

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Northern Dis	trict, continued	•	
242 243 244 245 246 247 248 249 250 251 252 253	222-50	Cowpen Creek Miners River	Unakwik Inlet Cowpen Cove, Unakwik Inlet
254 255	222-50		Unakwik Inlet Unakwik Inlet
256 257 258 259 260 261 262 263 264 265 266 267 268 269	222-20	Complex Creek Williams Creek Jonah Creek Marker Creek Plundered Creek Waterfall Creek Siwash River Unakwik Creek Olsen Cove Creek	Jonah Bay, Unakwik Inlet Siwash Bay, Unakwik Inlet Olsen Cove Olsen Cove Olsen Cove Kiniklik Cove
270 271 272 273 274 275 276 277 278 279 280 281	222-30	Pellew Creek Anchorage Creek Schoppe Creek Concealed Creek Black Bear Creek Dead Creek Comeback Creek Canyon Creek Poor Creek Eaglek River -Continued-	Point Pellew Point Pellew, Eaglek Bay Eaglek Bay Schoppe Bay, Eaglek Bay Schoppe Bay, Eaglek Bay Schoppe Bay, Eaglek Bay

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Northern [istrict, continue	d.	
282	222-30	Good Creek	Eaglek River Delta, Eaglek Ba
283		Bad Creek	Eaglek River Delta, Eaglek Ba
284			Cascade Bay, Eaglek Bay
285		Cascade River	Cascade Bay, Eaglek Bay
286			Cascade Bay, Eaglek Bay
287			Cascade Bay, Eaglek Bay
288		High Creek	Derickson Bay, Eaglek Bay
289		Derickson Creek	Derickson Bay, Eaglek Bay
290 291		Low Creek	Derickson Bay, Eaglek Bay
291		Papoose Creek	Derickson Bay, Eaglek Bay Squaw Bay
293		West Twin Creek	Perry Island
294		East Twin Creek	Perry Island
295	222-30	Lambert Lagoon	Perry Island
296	222-40	Naked Creek	Cabin Bay, Naked Island
297	222-40	Clock Creek	Peak Island
298	222-10	Finski Creek	Glacier Island
299	222-10	Campbell Creek	Glacier Island
		- Julian Colon	CHARLET TOTALL
Coghill Di	strict		
300	223-20	Red Creek	Esther Passage
301			Esther Passage
302		Stakeout Creek	Esther Passage
303		Triple Creek	Esther Passage
304		Passing Creek	Esther Passage
305		Pot Creek	Esther Passage
306			Esther Passage
307 308	223-20	Village Creek Nonsense Creek	Esther Passage Esther Passage
		Honsense Creek	
309	223-30		Port Wells
310		Golden Lagoon	Port Wells
311		Golden River	Port Wells
312			Golden Bay, Port Wells
313		٥.	Golden Bay, Port Wells
314		Avery River	College Fiord
315		Fools Creek	College Fiord
316 317		Reef Creek	College Fiord
317			College Fiord

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	- Descriptive location
Coghill Di	strict, continued	•	
318 319 320 321 322 323 324 325	223-30	Crescent River Amherst Springs Amherst River Lafayette River Coghill River	College Fiord
326 327 328	223-30	Holyoke Creek	College Fiord College Fiord College Fiord
329 330 331 332	223-20	Gran Creek	Esther Island, Port Wells Esther Island, Port Wells Granite Bay, Esther Is., Port Wells Granite Bay, Esther Is., Port Wells
333 334	223-20	South Gran Creek Error Creek	Granite Bay, Esther Is., Port Wells Esther Island, Port Wells
335 336 337 338 339 340 341	223-40 223-40	Esther River	Lake Bay, Esther Island Lake Bay, Esther Island Quillian Bay, Esther Island Quillian Bay, Esther Island Esther Bay, Esther Island Esther Bay, Esther Island Esther Bay, Esther Island
342 343 344 345	223-20	Shoestring Creek	Shoestring Bay, Esther Island Shoestring Bay, Esther Island Shoestring Bay, Esther Island Esther Passage, Esther Island
400 401 402 403 404 405 406 407 408 409 410	223~10	Mosquito Creek	Point Pakenham, Barry Arm Point Pakenham, Barry Arm Barry Arm Barry Arm Barry Arm Barry Arm Harriman Fiord Harriman Fiord Serpentine Flats, Harriman Fiord Harriman Fiord

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Coghill Dist	rict, continued.		
411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433	223-10	Barry Creek Harrison Creek Wanigan Creek Mine Creek Hobo Creek Worthless Creek Barren Creek Mill Creek Bettles River Backout Creek Old Creek Hummer Creek Chasm Creek Pirate Creek Airplane Creek Meacham Creek Pigot River Swanson Creek Longitude Creek	Barry Arm, Point Doran Barry Arm Barry Arm Harrison Lagoon, Port Wells Harrison Bay, Port Wells Granite Mine Creek, Port Wells Hobo Bay, Port Wells Bettles Bay, Port Wells Bettles Lagoon, Port Wells Bettles Lagoon, Port Wells Bettles Lagoon, Port Wells Bettles Bay, Port Wells Bettles Bay, Port Wells Hummer Bay, Port Wells Hummer Bay, Port Wells Hummer Bay, Port Wells Pirate Cove, Port Wells Pirate Cove, Port Wells Pigot Bay, Port Wells
Northwestern	District		
434 435 436 437 438 439 440 441 442 443 444 445 446 447 448	224-10	Entry Cove Creek Logging Camp Creek Poe River Wind Creek Billings Creek West Wind Creek Shakespeare Creek Whittier Creek Cove Creek Trinity Creek Clean Creek Barge Creek Shotgun Creek Squirrel Creek	Passage Canal Logging Camp Bay, Passage Canal Passage Canal Billings Delta, Passage Canal Passage Canal Billings Delta, Passage Canal Passage Canal Passage Canal Passage Canal Passage Canal Shotgun Cove, Passage Canal Shotgun Cove, Passage Canal Shotgun Cove, Passage Canal Shotgun Cove, Passage Canal Passage Canal Blackstone Bay

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Northweste	ern District, cont	inued.	
440	224 10		Blackstone Bay
449 450	224-10	Tebenkof Creek	Blackstone Bay
		Blackstone Creek	Blackstone Bay
451 452	•	blackstone treek	Surprise Cove, Cochrane Bay
452 453		Surprise Creek	Surprise Cove, Cochrane Bay
453 454		Halferty Creek	Cochrane Bay
45 4 455		Paulson Creek	Cochrane Bay
456		rautson creek	Cochrane Bay
450 457			Cochrane Bay
458		Parks Creek	Cochrane Bay
459		Rainy Creek	Cochrane Bay
460		Strom Creek	Cochrane Bay
461		Cochrane Creek	Cochrane Bay
462		occinanc orcer	Cochrane Bay
463			Cochrane Bay
464		Gilbert Creek	Cochrane Bay
465		Robber's Creek	Cochrane Bay
466			Cochrane Bay
467			Cochrane Bay
468			Cochrane Bay
469	224-10	Wickett Creek	Cochrane Bay
470	224÷30		Culross Passage
470 471	224-30	Narrows Creek	Culross Passage
472		hallows creek	Culross Passage
473			Goose Bay, Culross Passage
474		•	Long Bay, Culross Passage
475			Long Bay, Culross Passage
476		Shrode Creek	Long Bay, Culross Passage
477			Long Bay, Culross Passage
478			Culross Island, Culross Passag
479	224-30	Culross Creek	Culross Passage
480 481	224-40	Mink Creek	Mink Harbor, Port Nellie Juan North Nellie Juan
482			North Nellie Juan
483		Fact Fire - Out 1	North Nellie Juan
484		East Finger Creek	Port Nellie Juan
485 486		West Finger Creek	Kings Bay
486		Turn Creek	Kings Bay
487 488		Kings River	Kings Bay
488		Nellie Juan River	Kings Bay

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Northwes	tern District, co	ntinued.	
489	224-40	Manley Creek	Port Nellie Juan
490		Greystone Creek	Port Nellie Juan
491	•	Deep Water Creek	Port Nellie Juan
492			Port Nellie Juan
493		Most Creek	Port Nellie Juan
494			McClure Bay, Port Nellie Juan
495		Chimevisky Creek	McClure Bay, Port Nellie Juan
496		•	McClure Bay, Port Nellie Juan
497			McClure Bay, Port Nellie Juan
498		McClure Creek	McClure Bay, Port Nellie Juan
499	224-40	Shipyard Creek	Port Nellie Juan
Eshamy D	istrict		
500	225-10	Point Nellie Juan Cr	•
500 501	225-10	Tiedeman Creek	Foul Bay
301	223-10	rredelilati Creek	rour bay
502	225-20	Discher Creek	Main Bay
503	220 20	Main River	Main Bay
504		Comstock Creek	Main Bay
505	225-20	Hana Creek	Falls Bay
506	225-30	Loomis Creek	Eshamy Bay
507		Gumboot Creek	Eshamy Bay
508		J. D. Solf Creek	Eshamy Lagoon, Eshamy Bay
509		53 1 1 0 1	Eshamy Lagoon, Eshamy Bay
510	•	Eleshansky Creek	Eshamy Lagoon, Eshamy Bay
511		Eshamy River	Eshamy Lagoon, Eshamy Bay
512			Eshamy Lagoon, Eshamy Bay
513 514	•		Eshamy Bay
514 51 5			Eshamy Bay
516	225-30	Clemence Creek	Eshamy Bay Eshamy Bay
		oremence creek	Estidity Day
Southwes.	tern District		
600	226-20		Granite Bay, Dangerous Passag
601	220-20	Paddy Creek	Paddy Bay, Dangerous Passage
602		Nacktan Creek	Paddy Bay, Dangerous Passage
603		Ewan Creek	
604	gradient de la company	Erb Creek	Ewan Bay, Dangerous Passage
605		LID CIECK	Ewan Bay, Dangerous Passage Ewan Bay, Dangerous Passage
000			Ladii bay, bangerous rassage
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Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Southweste	rn District, cont	inued.	
		Tildeds	Jackson Bay Dangerous Dangero
606	226-20		Jackpot Bay, Dangerous Passage
607			Jackpot Bay, Dangerous Passage
608		Jackpot River	Jackpot Bay, Dangerous Passage
609			Jackpot Bay, Dangerous Passage
610		Kompkoff River	Jackpot Bay, Dangerous Passage
611			Jackpot Bay, Dangerous Passage
612		- 1 - 2	Jackpot Bay, Dangerous Passage
613		Jackson Creek	Jackpot Bay, Dangerous Passage
614	:	Spiros Creek	Jackpot Bay, Dangerous Passage
615		T1 0 1	Jackpot Bay, Dangerous Passage
616		Tiger Creek	Icy Bay, Dangerous Passage
617		Princeton Creek	Icy Bay, Dangerous Passage
618	•	Junction Creek	Chenega Is., Knight Is. Passage
619	,		Masked Bay, Chenega Island
620	. •	-	Chenega Island, Dangerous Passag
621		Totemoff Creek	Chenega Island, Dangerous Passag
622			Chenega Island, Dangerous Passag
623		Brizgaloff Creek	Chenega Island, Dangerous Passag
624			Chenega Island
625		Kononoff Creek	Chenega Island
626			Kake Cove, Chenega Island
627		Kake Creek	Kake Cove, Chenega Island
628		Chenega Creek	Chenega Is., Knight Is. Passage
629			Whale Bay
630		Bainbridge Creek	Whale Bay
631		Wolverine Creek	Whale Bay
632		Claw Creek	Whale Bay
633	,	Pablo Creek	Whale Bay
634		Passover Creek	Whale Bay
635		18 - 7 0	Whale Bay
636	000.00	Whale Creek	Whale Bay
637	226-20	Countess Creek	Point Countess, Knight Is. Passa
638	226-40		Bainbridge Passage
639	226-50	Passage Creek	Bainbridge Passage
640		-	Port Bainbridge
641			Port Bainbridge
642			Port Bainbridge
643			Port Bainbridge
644			Auk Bay, Port Bainbridge
645			Port Bainbridge
646		Puget Lake	Puget Bay
647		-	Puget Bay

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Southweste	ern District, cont	inued.	
648	226-50		Puget Bay
649		Puget River	Puget Bay
650	ř	· ·	Puget Bay
651		Doubtful Creek	Swanson Bay, Bainbridge Islan
652			Hogg Bay, Bainbridge Island
653		Hogg Creek	Hogg Bay, Bainbridge Island
654	226-50		Hogg Bay, Bainbridge Island
CEE	226-40	Johnson Creek	Painbuidae Island
655 656	220 -4 0	Halverson Creek	Bainbridge Island Bainbridge Island
656 657		na iversui treek	Prince of Wales Passage
658			Prince of Wales Passage Prince of Wales Passage
659			Prince of Wales Pass., Evans 1
660			Prince of Wales Pass., Evans 1
661		Calvert Creek	Shelter Bay, Evans Island
662		carvert creek	Shelter Bay, Evans Island
663		Shelter Creek	Shelter Bay, Evans Island
664		Evans Creek	Evans Island
665		Bjorn Creek	Latouche Passage, Evans Island
666		0'Brien Creek	Crab Bay, Evans Island
667		Anderson Creek	Sawmill Bay, Evans Island
668		Ashton Creek	Sawmill Bay, Evans Island
669		Larsen Creek	Sawmill Bay, Evans Island
670		Montgomery Creek	Latouche Island
671		Montgomery Creek	Big Bay, Latouche Island
672			Big Bay, Latouche Island
673		Falls Creek	Big Bay, Latouche Island
674		Talls Cleek	Big Bay, Latouche Island
675		Chicken Creek	Latouche Island
676		Horseshoe Creek	Horseshoe Bay, Latouche Island
677		Hayden Creek	Latouche Island
678		nayaen oreek	Sleepy Bay, Latouche Island
679			Latouche Island, Montague Stra
680	226-40	Thumb Creek	Thumb Bay, Mummy Bay, Knight I
		Traine or Got	The same of a committee of a contract of the same of t
681	226-30	Hogan Creek	Hogan Bay, Knight Island
682		Snug Harbor Creek	Snug Harbor, Knight Island
683		3	Snug Harbor, Knight Island
684		South Creek	Marsha Bay, Knight Island
685		North Creek	Marsha Bay, Knight Island
			•
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Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Southwest	ern District, cont	inued.	
686 687 688	226-30 226-30	Sockeye Creek	Bay of Isles, Knight Island Bay of Isles, Knight Island Bay of Isles, Knight Island
689 690 691	226-10	Louis Creek	Louis Bay, Knight Island Herring Bay, Knight Island Herring Bay, Knight Island
692 693 694 695 696 697 698 699	226-10 226-20 226-20	Herring Creek Audrey Creek Barnes Creek Mallard Creek Cathead Creek	Herring Bay, Knight Island Lower Herring Bay, Knight Island Johnson Bay, Knight Island Drier Bay, Knight Island Drier Bay, Knight Island Barnes Cove, Drier Bay, Knight Island Barnes Cove, Drier Bay, Knight Island Cathead Bay, Drier Bay, Knight Island
Montague I	District		
700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720	227-10	San Juan Creek Trap Creek Point Creek Clam Beach Creek Logger's Creek MacLeod Creek Hanning Creek Quadra Creek	San Juan Bay, Montague Island MacLeod Harbor, Montague Island Montague Strait, Montague Island Montague Strait, Montague Island Hanning Bay, Montague Island Hanning Bay, Montague Island

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Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Montague D	istrict, continue	d.	n Managa P Managa ang ang ang ang ang Salamba at ang P Manananana, ana dan tang ang P Mananananananananananana
721 722 723	227-10		Montague Island Montague Island Montague Island
724 725 726		Montague Creek	Montague Island Montague Island Montague Island
727 728 729	227-10		Montague Island Montague Island Montague Island
730 731 732 733	227-20		Montague Island Montague Island Montague Island Montague Island
733 734 735 736 737			Montague Island Montague Island Montague Island Montague Island Montague Island
738 739 740 741		Russell Creek Swamp Creek Kelez Creek Chalmers River	Montague Island Montague Island Port Chalmers, Montague Island Port Chalmers, Montague Island
742 743 744		Wilby Creek	Port Chalmers, Montague Island Port Chalmers, Montague Island Port Chalmers, Montague Island
745 746 747 748 749 750		Wild Creek Schuman Creek Cabin Creek Gilmour Creek Shad Creek	Port Chalmers, Montague Island Port Chalmers, Montague Island Port Chalmers, Montague Island Montague Island Montague Island Montague Island
751 752 753		Stockdale Creek	Stockdale Harbor, Montague Island Stockdale Harbor, Montague Island Stockdale Harbor, Montague Island
754 755 756		Dry Creek Graveyard Creek	Stockdale Harbor, Montague Island Stockdale Harbor, Montague Island Montague Island
757 758			Montague Island Rocky Bay, Montague Island
759 760 761		Rocky Creek Curran Creek	Rocky Bay, Montague Island Curran Anchorage, Rocky Bay Rocky Bay, Montague Island

Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Montague D	istrict, continued	1.	
762	227-20		Zaikof Bay, Montague Island
763			Zaikof Bay, Montague Island
764			Zaikof Bay, Montague Island
765 .			Zaikof Bay, Montague Island
766		Carr Creek	Zaikof Bay, Montague Island
767			Zaikof Bay, Montague Island
768			Zaikof Bay, Montague Island
769		Zaikof Creek	Zaikof Bay, Montague Island
770		Udall Creek	Zaikof Bay, Montague Island
771	•	McKernan Creek	Zaikof Bay, Montague Island
772		e e	Zaikof Bay, Montague Island
773			Zaikof Bay, Montague Island
774		Rosswog Creek	Zaikof Bay, Montague Island
775		Pautzke Creek	Zaikof Bay, Montague Island
776			Zaikof Bay, Montague Island
777.	227-20	Schooner Creek	Zaikof Bay, Montague Island
778	227-30	Beach River	Fact Montague Island
778 779	221-30	Nellie Martin River	East Montague Island Patton Bay, Montague Island
779 780		merrie martin kiver	Patton Bay, Montague Island
781		•	Patton Bay, Montague Island
782	•	Patton Creek	Patton Bay, Montague Island
783		raccon creek	Jeanie Cove, Montague Island
784		Jeanie Creek	Jeanie Cove, Montague Island
785		ocalite of cer	Jeanie Cove, Montague Island
786			Southeast Montague Island
787	227-30	Deception Creek	Southeast Montague Island
788	227-20	Green Creek	Green Island
789	227-20	Gibbon Creek	Gibbon Anchorage, Green Island
Southeaste	rn District		
800	228-60	Lighthouse Creek	Cape Hinchinbrook, Hinchinbrook I
801	220-00	Ligitalouse creek	
802			Cape Hinchinbrook, Hinchinbrook I Cape Hinchinbrook, Hinchinbrook I
803	4.	English Creek	English Bay, Port Etches
804		Ling is of CER	Port Etches, Hinchinbrook Island
805		•	Port Etches, Hinchinbrook Island
806		Dog Salmon Creek	Port Etches, Hinchinbrook Island
807		Beaver Creek	Port Etches, Hinchinbrook Island
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Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

ADF&G stream number	Statistical area number	Stream name	Descriptive location
Southeaste	rn District	`	
808	228-60		Garden Cove, Port Etches
809			Garden Cove, Port Etches
810		Garden Creek	Garden Cove, Port Etches
811 812		Etches Creek Nuchek Creek	Port Etches, Hinchinbrook Island Port Etches, Hinchinbrook Island
813		Nuchek Creek	Port Etches, Hinchinbrook Island
814			Port Etches, Hinchinbrook Island
815	228-60	Constantine Creek	Hinchinbrook Island
27.5	000 50		He I to Later the Table
816	228-50	Bear Cape Creek	Hinchinbrook Island
817 818		Deer Creek Juania Creek	Hinchinbrook Island Hinchinbrook Island
819		Juanta Creek	Shelter Bay, Hinchinbrook Island
820			Shelter Bay, Hinchinbrook Island
821		Brown Bear Creek	Shelter Bay, Hinchinbrook Island
822			Shelter Bay, Hinchinbrook Island
823	228-50	Johnstone Creek	Hinchinbrook Island
824	228-40	•	Hinchinbrook Island
825	220-40	Eagle Point Creek	Hinchinbrook Island
82 6		Lugic Tomo orcen	Anderson Bay, Hinchinbrook Island
827		Captain Creek	Anderson Bay, Hinchinbrook Island
828		Cook Creek	Anderson Bay, Hinchinbrook Island
829		King Creek	Double Bay, Hinchinbrook Island
830		5 13 6 1	Double Bay, Hinchinbrook Island
831	220 40	Double Creek	Double Bay, Hinchinbrook Island
832	228-40		Double Bay, Hinchinbrook Island
833	228-20	Bates Creek	Fish Bay, Hinchinbrook Island
834		Hardy Creek	Fish Bay, Hinchinbrook Island
835		Scott Creek	Hawkins Cutoff, Hinchinbrook Island
836		Dan's Creek	Dan's Bay, Hinchinbrook Island
837		Seal Creek	Dan's Bay, Hinchinbrook Island
838		Cub Creek	Dan's Bay, Hinchinbrook Island
839 840	228-20	Goose Creek Mallard Creek	Dan's Bay, Hinchinbrook Island Hinchinbrook Island
		HATTATA OFECK	HINCHIIIDI OOK 1310IIG
841	228-10	Kenny Creek	Hinchinbrook Island
842	228-20	Muddy Creek	Hawkins Cutoff, Hawkins Island
843	228-20	Huddy Greek	Hawkins Cutoff, Hawkins Island
			HANKING OUTOIT, HOWKING ISTAIL

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Appendix A. Sequential list of salmon stream numbers, names, and locations, by management district and statistical area number, Prince William Sound, Alaska, 1981 (continued).

stream number	Statistical area number	Stream name	Descriptive location
Southeaste	rn District, cont	inued.	
844	228-30	Makaka Creek	Hawkins Island
845			Makaka Point, Hawkins Island
846			Makaka Point, Hawkins Island
847		Hawkins Creek	Hawkins Island
848		Corner Creek	Canoe Passage, Hawkins Island
8 49		Rollins Creek	Canoe Passage, Hawkins Island
850		Canoe Creek	Canoe Passage, Hawkins Island
851		Zillesenoff Creek	Canoe Passage, Hawkins Island
852		USFS Trail Creek	Canoe Passage, Hawkins Island
853		Whiskey Creek	Whiskey Cove, Hawkins Island
854		Bar Creek	Whiskey Cove, Hawkins Island
855		Gravel Beach Creek	Hawkins Island
856		West Lagoon	Cedar Bay, Hawkins Island
857		East Lagoon	Cedar Bay, Hawkins Island
858		North Lagoon	Cedar Bay, Hawkins Island
859			Windy Bay, Hawkins Island
860			Windy Bay, Hawkins Island
861		Bernard Creek	Windy Bay, Hawkins Island
862	228-30	Clamdigger's Cove	Hawkins Island
863	228-10	Orca Creek	Hawkins Island
864	220	Orca Narrows Creek	Orca Channel, Hawkins Island
865		Deep Creek	Deep Bay, Orca Inlet, Hawkins Isla
866		Hyde Creek	Mud Bay, Orca Inlet, Hawkins Islan
867	228-10	Trail Creek	Orca Inlet, Hawkins Island
8 6 8	228-20	Bluff Creek	Hawkins Cutoff, Hawkins Island
869	220-20	Crab Bay	Hawkins Cutoff, Hawkins Island
870		FAA Creek	Hawkins Cutoff, Hawkins Island
871	228-20	Derelict Creek	Hawkins Cutoff, Hawkins Island

